NEW JERSEY DEPARTMENT OF TRANSPORTATION

MEMORANDUM

TO: Eileen Connolly

FROM: Philip Marchetti

DATE: August 14, 1998

PHONE: 530-2292

SUBJECT: Endesco Services Inc./ Cement Lock Technology , Des Plaines IL 60018-1800

Cement Lock Technology was introduced to the Department in February, 1998. Director Michael C. Mensinger, of Endesco Services introduced the process of using dredged materials sediments, sludge, Bownfield wastes and other inexpensive proprietary additives to produce blended cement suitable for construction.

Analyzing the data from the included Laboratory Report it was felt that Cement Lock could effectively be used as a blended cement meeting the compressive requirement of ASTM C595. A control sample Type I Cement and Cement Lock blended cement Type 1/1P was used.

Comparatively, the compressive strength far exceeded expectations in 3, 7 and 28 day compression tests.

*ASTM C-595

CEMENT LOCK (PSI)	MINIMUM REQUIRED STRENGTH (PSI)
2500	1800
3525	2800
4640	3500

* See Laboratory Test Report attached

Of the other physical properties, time of set, Blaine fineness test, and material retained on the 325 sieve showed considerable differences from that of the control cement. Another issue is the specific gravity. The blended cement produced a lower specific gravity than that of normal cement. Also, the setting time was considerably different.

	CEMENT LOCK	CONTROL
Specific Gravity	2.97	3.15
Fineness-Blaine	3 93 M^2/kg	359 M^2/kg
Retained on 325 sieve	7.4%	3.0%
Setting Time	120 min.	75 min.

The above differences could be compensated for with mix design of the concrete if Cement Lock is consistent product. No analysis of the consistency of the product was done as only one sample was tested.

Other issues which were not addressed are envrionmental and worker health and safety issues. These issues would have to be addressed prior to general use of this material.

c F. Lovett
C. Toft

Form 43-14 11/71

New Jersey Department of Transportation

ANALYSIS OF MISCELLANEOUS MATERIALS

8-14-98 Serial No. 775550

Charged To: Cement Lock Technology

Type of Material Blended Cement

Proposed Use FA

Producer Cement Lock Technology Location: 1700 South Mount Prospect Road

Plant Cement Lock Technology Location: DesPlaines IL 60018-1800

Sample Taken From	Plant			
Quantity Represented	20# Blend #10 Control			
Marks on Sample				
Sampled By	M. Mensinger/C. Toft			
Grade Specified	Ty 1/1P ASTM C595 Control Type I			
Lot No. Shipped From				
Submitted on Inspector's Daily Report No.				
Date Taken	4-20-98			
Date Received at Laboratory	4-23-98			
Seal Number				
Laboratory Serial No.	775550			

REPORTED TO

Mike Mensinger

P. Marchetti

C. Toft

TESTS	BLEND	ANALYSES CONTROL	REQUIRED MIN.	REQUIRED MAX.
Flow 25 drops	100-48.5% H_2O	48.5% H_2O		
Specific Gravity	2.97	3.15		
Fineness-Blaine m^2/kg	393	359		
325 Sieve % ret.	7.4	3.0		
Autoclave Expansion Max. %		0.03		0.50
Contraction Max.%	-0.03			0.20
Setting Time Minutes	120	75	45	420
Air Content %	10	11		12
Compressive Strength psi				
3d	2500	3330	1800	
7d	3525	4615	2800	
28d	4640	4640	3500	
MgO %	2.6	2.8		5.0
SO_2 %	2.5	3.2		4.0
LOI %	1.1	1.4		5.0-

REMARKS: Complies.

P. Marchetti